Torture and its consequences:

CURRENT TREATMENT APPROACHES

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CURRENT TRENDS IN THE TREATMENT OF POST-TRAUMATIC STRESS SYMPTOMS

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With estimates of the prevalence of post-traumatic stress disorder (PTSD) ranging from 1–2% of the general population, it is not surprising that PTSD is a topic of rising concern for policy makers and clinicians alike (Davidson *et al.*, 1990; Helzer, Robins & McEvoy, 1987; Kulka *et al.*, 1988). The study of PTSD has consequently received increased attention from clinical researchers. Since inclusion of the disorder in the third edition of the *Diagnostic and Statistical Manual* (DSM–III) of the American Psychiatric Association (1980, 1987), there has been a proliferation of knowledge about the assessment, treatment, and prevalence of PTSD, as well as the biological and cognitive processes associated with it (Keane, 1989). The purpose of this chapter is to provide an overview of the advances made in the treatment of psychological trauma over the past decade.

While clearly the greatest advances in research on PTSD have stemmed from the study of combat-related PTSD, particularly in American survivors of Vietnam and Israeli survivors of the Yom Kippur and Lebanon Wars, many of the lessons learned from the study of these populations can be generalized readily to the study of survivors and victims of other life endangering experiences. Common themes appear to be associated with traumas of different origins and include conditions such as terror, helplessness, guilt over actions taken or avoided, fear of bodily injury, and consuming loss. Traumatic responses generally include common symptoms such as anxiety, depression, anger or rage, nightmares and concomitant sleep disorder, physiological hyperarousal and reactivity, and emotional numbing. Psychosocial problems also seem to occur and include alienation, substance abuse, vocational incapacity, and an impaired ability to form intimate attachments. With such extensive commonality in clinical phenomenology, the lessons learned from the study of combat trauma may provide a template for the development of assessment and treatment methods for other types of trauma.

The study of trauma secondary to torture can clearly benefit from an

integration with the combat literature. With little extant empirical information on torture, it is relevant to consider the conditions of combatants and prisoners of war in trying to develop a comprehensive understanding of the clinical technology that might be of some assistance to the treatment of torture victims. While some of the sociopolitical issues surrounding torture may differ from those related to combat trauma, the issues of helplessness, terror, bodily injury, and guilt (or responsibility) over the experience seem especially common to both forms of trauma. This chapter, then, focuses on information currently available on the behavioral treatment of PTSD. When possible, an emphasis is placed on empirical studies so that the reader can benefit from the scientific knowledge accumulating in the study of PTSD.

A variety of treatments have been employed, separately and combined, to assist in the adjustment process of traumatized individuals. Exposure-based behavioral and cognitive-behavioral treatments have shown considerable promise in the amelioration of symptoms associated with post-traumatic stress disorder (PTSD) (Lyons & Keane, 1988; Fairbank & Brown, 1988; Keane *et al.*, 1989). Use of these treatments has been substantiated by empirical investigations that have demonstrated their efficacy. Moreover, therapy-process studies similarly have provided data that are consistent with predictions of the underlying theory (cf. Chemtob *et al.*, 1988; Foa, Steketee & Olasov Rothbaum, 1989; Keane, Zimering & Caddell, 1985; Levis & Hare, 1977). Findings on the biological substrates of PTSD (e.g. van der Kolk, 1983, 1987; Friedman, 1988; Krystal *et al.*, 1989) have also provided guidance for appropriate pharmacotherapeutic intervention. Similarly, other treatments such as group therapy (e.g. rap groups for combat veterans), skills training, and family therapy, have been used with notable success in treating traumatized individuals.

In the following sections, these main treatment approaches will be described, compared, and contrasted. Clearly, these treatments do not all provide the same therapeutic benefits to traumatized individuals. For example, cognitive treatments may minimize the catastrophic thinking and cognitive distortions that frequently are present in traumatized persons, while pharmacotherapy may serve to reduce physiological concomitants of the trauma response. Thus, it is important to view these treatments in light of their specific treatment effects. Given the multifaceted nature of post-traumatic stress, systematic observations of differential effects from treatment become crucial. Identifying the effects obtained from a given treatment will ensure an optimal patient-treatment match.

Each section below will include the following aspects: 1) the rationale/conceptual framework behind a treatment approach, 2) a review of pertinent treatment literature, 3) the differential symptom effects related to the described treatment, and 4) a summary and comments about the treatment.

While the focus of this book is torture and its effects, most of the work reviewed and discussed in this chapter relates to combat-related PTSD. As stated above, this was intentional since the war-related PTSD literature is substantial and exceeds that of the torture literature. It also contains several controlled studies of PTSD treatment. In addition, combat-related PTSD is phenomenologically similar to the traumatic stress of torture victims. Conceptually, both populations are similar also because the stress to which they are exposed is extreme and largely uncontrollable.

DIRECT THERAPEUTIC EXPOSURE

Direct therapeutic exposure (DTE) is widely regarded as a critical component of comprehensive treatment for intractable post-traumatic stress symptoms. DTE as a treatment approach can include desensitization, flooding, implosive therapy, and all other variants of *in vivo* and imaginal exposure. Exposure treatment studies with combat-related PTSD have generally involved desensitization and flooding or implosive therapy. These two groups of treatment procedures evolved from related but separate conceptual frameworks.

Rationale/conceptual framework

Imaginal, *in vivo*, and *in vitro* desensitization procedures stem from the pioneering work of Wolpe (1958), and are based on the principle of 'reciprocal inhibition', that is, certain behavioral responses take precedence over, and thus 'inhibit' the expression of others. One application of reciprocal inhibition is systematic desensitization which include three aspects: 1) establishing an alternative behavior that is incompatible with, or will inhibit, the undesired behavior (usually relaxation), 2) establishing a written hierarchy of feared stimuli scenes or images in which the individual can experience, in equal-interval steps, a gradient of increasing arousal until the final step, whereupon he or she is exposed to the full range of feared stimuli, and 3) exposing the individual to the feared stimuli in a titrated fashion while he or she engages in the inhibitory behavior (relaxation). Through this process, the individual receives increasing exposure to feared stimuli while fear

responses are minimized, and eventually these fear responses are replaced by more adaptive ones.

Flooding and implosive therapy are based on early work by Stampfl & Levis (1967), and their use is linked conceptually with the work of Mowrer (1960; Levis & Hare, 1977; Keane *et al.*, 1985). Stampfl & Levis' (1967) model of psychopathology proposed the notion of 'serial conditioning' and the 'conservation of anxiety hypothesis' to explain why many trauma-induced symptoms, including those in torture victims, seem resistant to natural extinction effects. Extinction is the gradual weakening of the capacity of conditioned stimuli to evoke a conditioned response when the conditioned stimuli is presented without the unconditioned stimuli. Levis and Hare (1977) explain resistance to extinction by proposing that thoughts and feelings can become conditioned stimuli and they can 're-vitalize' other conditioned stimuli that have been extinguished or partially extinguished. In this way, trauma reactions become self-perpetuating (i.e. resistant to extinction) and the fear or anxiety is conserved. Also, more potent stimuli can condition less potent or non-trauma-related stimuli and the individual's anxiety/fear response can generalize beyond the originally present trauma cues. An example of this resistance to extinction can be seen in the (hypothetical) case of a torture victim who had been tied with rope and brutally assaulted. Presentation of a rope or any rope-like article could induce considerable arousal and anxiety. These fears could also generalize to any object that might be used to bind hands or feet (e.g. extension cords, shoe laces, etc).

The active elements of implosive or flooding therapy involve directing the victim to repeatedly and systematically imagine all aspects of the traumatic incident(s) in the context of a relationship with a knowledgeable and supportive professional. Typically this exposure occurs over many sessions and each memory is presented using imagery for a minimum of 100 minutes. In this approach, the individual is asked to vividly recall trauma stimuli using as many senses (sights, sounds, smells, tastes, tactile sensations) as possible. This comprehensive approach to cue presentation includes aspects of both stimulus and response propositions (Lang, 1977). Although there are variations of this approach (e.g. Farnsworth, Wood, & Ayers, 1975; Grigsby, 1987), the therapist typically serves as a facilitator, directing the individual to experience and reexperience a recollection of the traumatic event(s), reminding him or her to recall the event as if it were happening in that instant.

As opposed to systematic desensitization, the object of implosive therapy and flooding is to have the patient experience in the therapy

session the arousal associated with the traumatic memories. This arousal is intentionally maintained until it is attenuated through extinction; within and across sessions the individual becomes less aroused to these trauma memories, and thus, symptomatology abates. The basic difference between implosive therapy and flooding is that while the latter entails having the individual image real or trauma-specific stimuli, implosive therapy also involves all possible conditioned stimuli, including hypothesized faulty beliefs and value systems (e.g. themes such as loss of control, eternal damnation, guilt, or humiliation and shame). The aim in implosive therapy is to address the anxiety and conflict associated with the many psychological issues related to the traumatic event, typically involving all stimuli hypothesized to be a part of the trauma response (e.g. thoughts and images directly and indirectly linked to the trauma stimuli).

PTSD and desensitization treatments

In an early report of the behavioral treatment of trauma, Kipper (1977) described *in vivo* desensitization treatment of four Israeli combat veterans of the Yom Kippur War who suffered from war-related fears (closed spaces, noises, bandages, and people and crowds). In short, these treatments were individualized and involved relaxation training followed by graduated and hierarchically sequenced exposure to circumstances, people, and materials, that were phobically avoided by or produced excessive physiological reactions from the respective veterans. Kipper reported the treated veterans to have attained success in mastering the phobic reactions (as shown by the veterans' ability to be exposed to greater steps in their hierarchies) and claimed that his findings support '... the inclusion of these modes of intervention in the list of treatments recommended for war neuroses ...' (p. 221).

Schindler (1980), also employing systematic desensitization, successfully treated a 29 year-old traumatized Vietnam combat veteran. Prior to treatment, the veteran reported nightly nightmares and anxiety about sleeping. After five 30-minute sessions the veteran reported experiencing no more nightmares. A seven-month follow-up revealed no reoccurrence of the disturbing nightmares.

Bowen and Lambert (1986) also reported on the successful use of systematic desensitization with combat traumatized veterans. These investigators treated eight Vietnam combat veterans, a World War II combat veteran/POW, and one veteran who witnessed a catastrophic airplane crash. All of the veterans were judged to have significant

Table 17.1. *Symptom changes in combat veterans undergoing deliberate therapeutic exposure*

Article	Treatment modality	Symptom changes from treatment
Black & Keane (1982)	Implosive therapy	Decreased anxiety
Boudewyns & Hyer (1990)	Implosive therapy	Decreased physiological responding (heart rate, forehead tension, skin conductance) when imaging trauma related scenes Improvements on measure of anxiety/depression, vigor, alienation, and confidence in skills
Bowen & Lambert (1986)	Systematic desensitization	Decreased heart rate and muscle tension (EMG) when exposed to trauma-related stimuli Decreased subjective stress
Cooper & Clum (1989)	Flooding therapy	Decreased state and trait anxiety Decreased sleep disturbance Decreased nightmares Decreased behavioral avoidance
Fairbank, Gross & Keane (1983)	Flooding therapy	Decreased motoric arousal when exposed to trauma cues Decreased depression ratings Decreased intrusive thoughts of trauma
Fairbank & Keane (1982)	Flooding therapy	Decreased daily anxiety Decreased anxiety related to traumatic cues Decreased intrusive thoughts of trauma Decreased heart rate and skin conductance when exposed to trauma-related stimuli
Grigsby (1987)	'Imagery' (flooding)	Decreased intrusive thoughts
Keane, Fairbank, Caddell & Zimmering (1989)	Implosive therapy	Decreased state anxiety Decreased reexperiencing symptoms Decreased startle Decreased depression Decreased self-reported fear Improvements in memory, concentration

Table 17.1. (*cont.*)

Article	Treatment modality	Symptom changes from treatment
Keane & Kaloupek (1982)	Implosive therapy	Decreased state anxiety Decreased anxiety ratings Increased sleep time Decreased nightmares Decreased flashbacks
Kipper (1977)	*In vivo* desensitization	Habituation to higher steps of hierarchies
Miller & DiPilato (1983)	Systematic desensitization	– –
Mueser & Butler (1987)	Flooding therapy	Decreased auditory hallucinations
Saigh (1986)	*In vitro* flooding	Decreased anxiety Decreased behavioral avoidance Decreased depression Improved short-term memory, freedom from distraction, and concentration Decreased classroom hyperactivity
Saigh (1987*a*)	*In vitro* flooding	Decreased state and trait anxiety Decreased behavioral avoidance Decreased depression Increased self-report of assertiveness Improved short-term memory, freedom from distraction, and concentration
Saigh (1987*b*)	*In vitro* flooding	Decreased anxiety Decreased trauma-related thoughts Decreased behavioral avoidance Increased self-report of assertiveness Improved short-term memory, freedom from distraction, and concentration Decreased classroom hyperactivity Improved school grades
Schindler (1980)	Systematic desensitization	Remission of trauma nightmares

PTSD symptomatology and received several months of an outpatient treatment which included systematic desensitization; most of the veterans were also involved in group psychotherapy and received psychotropic medication. This treatment package was found to significantly reduce the veterans' physiological arousal and subjective stress when exposed to a series of combat verbally described scenes.

Collectively, the findings reported above indicate that systematic desensitization procedures are effective in reducing certain symptoms in traumatized individuals (Table 17.1). Given its efficacy with combat and other trauma populations (e.g. Williams, 1976; Wolff, 1977), the demonstration of systematic desensitization's efficacy with survivors of torture has promise and awaits empirical study.

PTSD and implosive therapy and flooding

Initially, evidence supporting the efficacy of implosive therapy and flooding with traumatized veterans came from case studies (Black & Keane, 1982; Fairbank, deGood & Jenkins, 1981; Fairbank, Gross & Keane, 1983; Fairbank & Keane, 1982; Keane & Kaloupek, 1982). More recently, randomized and controlled outcome studies have appeared that demonstrate clinical benefits from using this exposure-based procedure (Boudewyns & Hyer, 1990; Boudewyns *et al.*, in press; Cooper & Clum, 1989; Keane *et al.*, 1989).

Black and Keane (1982), used implosive therapy to treat a World War II Navy combat veteran with a 36-year history of combat-related fears. The investigators reported dramatic reductions in anxiety after three treatment sessions that led to lasting changes (18 months) in the individual's use of health care services. Fairbank and Keane (1982) used relaxation therapy and imaginal flooding to treat two Vietnam combat veterans with PTSD symptoms. Using a single case multiple-baseline methodology, these investigators found that treatment served to decrease psychological arousal to specific memories of combat experiences. This reduction in response to imagery of the events was documented using both subjective and psychophysiological measures (i.e. heart rate and skin conductance). Keane and Kaloupek (1982) also treated a Vietnam combat veteran using implosive therapy. In 19 sessions, the veteran's adjustment improved on measures of anxiety, nightmares, flashbacks, and increased sleep. This improvement was maintained at a 12-month follow-up.

Fairbank *et al.* (1983) treated a 32-year old Vietnam combat veteran with PTSD whose entire unit was decimated by an enemy assault wherein he eventually lost a leg from battle wounds. The patient had

never previously discussed the incident with anyone, but experienced parts of intrusive memories of the assault in the form of recurrent, distressing nightmares and frightening flashbacks over an 11-year period. During exposure treatment the veteran reported considerable reductions in anxiety by the end of each session; by the end of treatment, he showed measurable decreases in motoric activity, depression ratings, and self-monitored intrusive memories of the event. A post-test probe assessment indicated that the patient could imagine the traumatic event with considerable reduced subjective and motoric arousal. At a 6-month follow-up, the veteran reported that he could more comfortably think about and discuss his trauma.

In a series of single-subject multiple baseline design treatments, Saigh (1986, 1987*a*, *b*) used flooding with traumatized child and adolescent bystanders of the Lebanon invasion and civil war. The trauma survivors evidenced anxiety, avoidance behavior, concentration problems, and depression. Flooding served to promote rapid positive changes in these children's affective, behavioral, and cognitive status.

In a randomized trial, Cooper and Clum (1989) compared a 'standard' individual and group PTSD treatment program with a standard program supplemented with flooding. Seven Vietnam combat veterans were assigned to each of the respective groups and the investigators found that only the flooding treatment group demonstrated significant symptom reduction. For the veterans receiving this treatment, improvements were shown in the form of decreased sleep disturbance, nightmares, subjective discomfort ratings during a behavioral avoidance task, and state anxiety. At three month follow-up, the flooding group continued to show decreases in sleep disturbance and psychotic-like symptoms.

In a controlled treatment outcome study of 24 Vietnam veterans with PTSD, Keane *et al.* (1989) provided 12 to 14 sessions of implosive therapy. The treatment focused on assisting the patients in exposure to traumatic events in imagery. This treatment was found to be superior to a no treatment (waiting list control) in effecting changes in the veterans' re-experiencing symptoms, anxiety, and depression, but did not appear to influence the affective numbing or social avoidance aspects of PTSD. These treatment gains were maintained at a six month follow-up.

Similarly, Boudewyns and Hyer (1990) compared direct therapeutic exposure (DTE; i.e. imaginal flooding) with conventional one-to-one counseling in the treatment of combat-related PTSD. Thirty-eight PTSD inpatients were randomly assigned to receive either 10–12

Table 17.2. *Positive and negative symptoms of post-traumatic stress disorder*

Positive symptoms	Negative symptoms
Recurrent and intrusive distressing recollections of the event	Efforts to avoid thoughts or feelings associated with the trauma
Recurrent distressing dreams of the event	Efforts to avoid activities or situations that arouse recollections of the trauma
Sudden acting or feeling as if the traumatic event were recurring	Inability to recall an important aspect of the trauma
Intense psychological distress at exposure to events that symbolize or resemble an aspect of the traumatic event	Markedly diminished interest in significant activities
Sense of a foreshortened future	Feeling of detachment or estrangement from others
Difficulty falling or staying asleep	Restricted range of affect
Irritability or outbursts of anger	
Difficulty concentrating	
Hypervigilance	
Exaggerated startle response	
Physiologic reactivity upon exposure to events that symbolize or resemble an aspect of the traumatic event	

sessions of DTE or counseling. Participants from neither group showed significant decreases in daily self-ratings of anxiety. However, the DTE group did show decreased arousal, especially heart rate, when exposed to slides of combat, and the individuals from this group showed significant improvements on components of a structured psychological assessment (in anxiety/depression, vigor, alienation, and confidence in skills).

Differential symptom effects

In reviewing the results of studies described above it is clear that exposure-based behavior therapy can significantly reduce the effects

of traumatization. It is also clear that these treatments do not reduce all of the symptoms in the PTSD syndrome to an equal extent. Exposure appears to have the greatest impact on the more anxiety-based and observable, or 'positive' symptoms (e.g. startle, psychophysiological arousal, nightmares, irritability and anger), while negative ones (e.g. numbing, alienation, restricted affect) remaining relatively unchanged (Keane, 1989; Litz *et al.*, in press; see Table 17.2). For more uniform therapeutic benefit, additional or alternative treatments may be necessary. For example, Keane *et al.* (1985) recommended a stress management package that includes relaxation training, cognitive restructuring, and problem-solving skills training. Litz *et al.* (in press) suggest that clinicians might encourage their traumatized patients who show a preponderance of negative symptoms to increase interpersonal risk-taking and to arrange for success and mastery experiences via skills training and *in vivo* exercises. Alternately, Williams (1987) described a treatment program which addresses trauma survivors' experience of guilt. This program was designed to help veterans abreact, with the therapist playing an active role in probing and soliciting from the veteran a description of the traumatic incident(s). Other activities included in the guilt-reducing regiment are cognitive restructuring, the empty chair techniques (enabling the survivor express sentiments about those who did not survive or to explain behavior required for survival), and helping the veteran to give up sole responsibility for what happened, and to recognize his developmental level at the time of the incident(s).

Summary and comments

The differential effect on symptoms shown by the several DTE treatments suggests the need for treatment–patient matching at the treatment planning stage. Ascertaining whether an individual can possibly benefit from DTE is a primary consideration. With respect to this issue, Litz *et al.* (1990) have outlined decision rules for the proper use of DTE. The factors identified as important in determining the appropriateness of DTE treatment include an ability to provide a concise description of the traumatic event(s), no debilitating concurrent psychiatric or medical diagnosis, adequate motivation for change, and a demonstrated psychophysiological reactivity to traumatic memories. On the other hand, patients unsuited for DTE are those with characteristics that might interfere with the boundary conditions of DTE (e.g. poor ability to imagine, inability to tolerate intense arousal) or lead to unsatisfactory compliance or premature termination of treatment.

Exposure treatments may work best in combination with other treatments. For example, supportive therapy, cognitive therapy, anger or stress management, and social skills training are logical adjuncts to DTE. Pharmacotherapy may also be used to promote short term symptom relief. Combining therapies in a sensible way to maximize treatment success is a topic worthy of additional clinical and research exploration.

Due to the potential problems associated with the increase arousal and symptom escalation that accompanies implosive therapy (e.g. Giles, 1988; Kilpatrick & Best, 1984), stress management or desensitization approaches may be preferable. By virtue of how these 'milder' approaches are implemented, the individual never experiences high levels of arousal and consequently feels only manageable discomfort. However, other (e.g. Shipley & Boudewyns, 1980, 1988) have argued against implosive therapy's iatrogenic effects; these investigators argue that the published research data show implosive therapy to be as safe as, and in some ways safer than, traditional psychotherapeutic approaches. The patient who receives these mild treatments may also experience less extinction and consequently derive less benefit.

COGNITIVE BEHAVIORAL THERAPY

Recently, cognitive and information processing models for explaining post-trauma symptomatology have appeared in the literature (Chemtob *et al.*, 1988; Foa *et al.*, 1989; Jones & Barlow, 1990; Kreitler & Kreitler, 1988; Litz & Keane, 1989). Each of these theoretical formulations contains various common components that focus on cognitive processing, attentional processes, perception, and memory integration. A comparison of these various cognitive conceptualizations follows, with an emphasis on the unique elements of each.

Rationale/conceptual framework

Foa and Kozak (1986) proposed a fear memory network, for conceptualizing the anxiety disorders in accordance with the information processing model of fear outlined by Lang (1977, 1979). This network includes information: 1) about the feared stimulus, 2) about potential verbal, behavioral, and physiological responses, and 3) for assigning meaning to 1) and 2). This fear network is considered to be an executable program for escape and avoidance. Foa and Kozak argued that fear reduction occurs only when the fear network is activated and information is presented that is counter to and corrects the fear

network, as is accomplished in the extinction based DTE treatments. This reconstituted fear network as a result contains weaker escape and avoidance behavior components. Foa *et al.* (1989) contend that the information-processing model of fear (Foa & Kozak, 1986) more adequately explains PTSD symptomatology than does conditioning theory. In their view, conditioning theory sufficiently accounts for those symptoms involving fear and behavioral avoidance but falls short in explaining other trauma symptoms, such as aggressive responses from victims, emotional numbness, and social withdrawal often seen with trauma survivors. Support for this model has also been articulated by other PTSD researchers (e.g. Litz & Keane, 1989).

Recently, Chemtob *et al.* (1988) described an encompassing cognitive action theory of PTSD that incorporates theoretical propositions introduced by Beck & Emery (1985), Foa and Kozak (1986), Lang (1977, 1979), and Horowitz (1976). This framework specifies that fear is conceptually organized as hierarchically arranged action structures involving cognitive schemata that range from abstract constructs to discrete responses. At each level of the action structure is associative information about stimuli and responses ('nodes'). Node activation is controlled by the combined effect of neural potentiation and inhibition received from other nodes or environmental stimuli (external and internal).

Chemtob *et al.* (1988) proposed that PTSD is distinguished from other anxiety disorders by three features: 1) a higher standard level of potentiation for threat arousal nodes, 2) greater susceptibility to and escalation in arousal and threat interpretation, and 3) higher limits on arousal magnitude. The investigators also proposed that trauma survivors are more apt to select information that confirms their expectations of the (threatening) world around them. From this theoretical framework, Chemtob *et al.* (1988) recommend exposure-based and stress management treatments in work with PTSD.

Horowitz (1978, 1986) presents a psychodynamic formulation of stress response that contains a cognitive conceptualization of trauma. Two themes, denial and the compulsive tendency to repeat some aspect of the trauma, play a central role in his formulation. In addition to the use of brief dynamic therapy, Horowitz advocates behavior therapy, including systematic desensitization and implosive therapy, as treatment variations in work with trauma survivors.

Other cognitive theories of PTSD have also appeared recently. Kreitler & Kreitler (1988) posited a cognitive approach to anxiety and to the 'complex of clinically significant long term responses [that are] characteristic of individuals who have been exposed to an unusually

strong stressor' (p. 35). In describing why some individuals and not others develop long standing trauma responses, these investigators proposed that chronic anxiety originates in perceptual tendencies and is a reflection of a pattern of (maladaptive) meaning assignment. According to these investigators, meaning can be systematically analyzed along four sets of dimensions, including: 1) meaning dimensions (e.g. range of inclusion, consequences and results, temporal qualities, etc), 2) types of relation (e.g. attributive, comparative, etc), 3) forms of relation (e.g. positive, conjunctive, etc), and 4) shifts of referent (e.g. identical, associative, etc). In a systematic inquiry, these investigators found that higher anxiety individuals assign meaning to experiences in a unique way, including that they are

> ... highly sensitive to internal cues, bodily sensations, and pain; they are preoccupied with their body and incline toward hypochondriasis; emotionally they are excitable, tense, sensitive, and unstable; they tend toward worry, depression, and occasional hysteric swings; they tend to concentrate on fantasies, daydreams, and internal problems rather than on external reality; they tend to turn away from action and behave in a shy or withdrawn manner; they often adopt a critical judgmental-evaluative approach; they are concerned with moral standards, are highly conscientious, are stable in their attitudes and values, and take evaluations by others seriously; they tend to be guilt-prone and suffer from a sense of inadequacy; they are likely to delay gratifications; they tend to be introspective; they are often fast in reaction and may overestimate the duration of an event or action; they prefer the known and the familiar to the new and sensation-evoking; in the cognitive domain they tend toward rigidity, intolerance of ambiguity, and restriction in cognitive contents; in their approach to issues they tend to be subjectively biased, evaluative, and emotional rather than objective, factual, and analytic; they often deviate from presented situations to themes that are hardly, if at all, associated to the starting point; and they often perceive issues and solve problems in metaphoric-symbolic terms rather than rely on interpersonally shared considerations and common logical rules. (p. 46).

These investigators suggested that treatment for trauma victims should assist them in reassigning meaning, thereby cognitively altering their psychological condition.

PTSD and cognitive therapy

In a recent review of the trauma literature (Blake, Albano, & Keane, 1990), only one report was found evaluating the efficacy of cognitive therapy (McCormack, 1985). This report describes the use of a cognitively oriented counseling intervention with a Vietnam combat veteran which lead to successful progress on all treatment goals, including improved communication with the veteran's offspring. However, by virtue of relying on a case study design, the findings outlined in the report are subject to threats to both internal and external validity; controlled study is warranted in order to more fully evaluate the efficacy of cognitive therapy with PTSD patients. In addition to the paucity of articles on the cognitive treatment of PTSD, there were no studies directly testing the cognitive conceptual models described above. It is thus not possible to determine whether treatment focusing on changing cognitive schemas or belief systems will result in any lasting behavioral change or promote psychological adjustment. Given the importance of these approaches to treating trauma patients, clearly research is needed on the efficacy of cognitive therapies.

Summary and comments

The lack of published reports on cognitive therapy approaches to trauma raises several questions. First, how *do* these cognitive models translate to treatment? At present it appears that exposure-based, rather than cognitive, approaches are the treatments of choice. Foa and Kozak (1986) proposed that the changes resulting from exposure are a product of the emotional processing proposed by Rachman (1980), which incorporates altered cognitive processing. They proposed that four factors interfere with emotional processing: 1) cognitive avoidance, 2) absence of short-term habituation, 3) depression, and 4) overvalued ideation. In this view, the cognitive therapist's role might be to address and eliminate the barriers to optimal emotional processing, for example, by treating a coexisting depression or an excessively rigid cognitive style. However, research is needed to fully evaluate each of the four factors proposed by Foa and Kozak for their contribution to PTSD treatment.

Another question raised by the limited literature on cognitive factors associated with trauma involves the utility of currently available cognitive treatments. Applications to trauma can certainly be found in

the cognitive behavior therapy of Beck (1976; Beck & Emery, 1987), the rationale emotive therapy of Ellis (Ellis & Grieger, 1986), the cognitive behavior modification of Meichenbaum (1974, 1977), and the self-efficacy theory of Bandura (1977, 1986). Most of these approaches involve changing cognitive patterns by modifying maladaptive cognitions, irrational beliefs, negative self-statements, or increasing self-efficacy and expectations. The degree to which these therapies are helpful in the treatment of PTSD awaits further empirical documentation.

PHARMACOTHERAPY

The literature on the pharmacotherapy of PTSD is largely composed of numerous preliminary and exploratory efforts. The application of pharmacotherapy in the treatment of post-traumatic stress has been addressed in detail elsewhere (i.e. Roth, 1988; Friedman, 1988), but descriptions of representative studies and accompanying theoretical bases are presented here.

Rationale/conceptual framework

Review of the literature reveals few controlled studies of pharmacotherapy in the treatment of traumatic stress. Friedman (1988) identified three main reasons for the limited pharmacological treatment research on trauma: 1) post-traumatic stress disorder is conceptualized largely by the 2-factor psychological-behavioral model (Mowrer, 1960) of conditioned emotional arousal and reinforced avoidance; 2) the reluctance, in some mental health and societal circles, to acknowledge the validity of posttraumatic stress as a diagnosis; and 3) the short span of time since the publication of DSM-III (American Psychiatric Association, 1980) limiting systematic psychopharmacological investigations.

Clearly, in the treatment of trauma medications are a viable treatment option when the intensity or duration of a symptom compromises an individual's ability to participate in psychological treatment. It is likely that pharmacotherapy in conjunction with psychotherapy may prove necessary for providing effective treatment to some severely traumatized individuals. While most experts agree that pharmacotherapy alone is not sufficient for providing complete remission of PTSD, it may enable traumatized patients to optimally benefit from psychotherapy (Friedman, 1988). While exposure to torture and atrocities may result in permanent alterations of an individual's biological and biochemical status, the mechanisms of

action and biological markers of the disorder must first be identified and the medications systematically evaluated in controlled clinical trials in order to ascertain effective pharmacotherapy.

Decisions regarding whether to use a medication, or a combination of medications, should be based on sound biological models of trauma effects (cf. van der Kolk, 1987) and from idiographic assessment of identified symptoms. For example, van der Kolk's (1987) model of trauma includes viewing post-traumatic stress in part as a state of prolonged central nervous system (CNS) hyperreactivity and autonomic nervous system arousal. Accordingly, medications such as anxiolytic agents and beta-adrenergic blockers are often recommended. Therefore, the typical medication regime is a combination of drugs that focus on specific symptoms or symptom clusters. Medications that address specific symptom clusters (positive and negative) can be sensibly administered and monitored. Medications that have been utilized with trauma patients include mood stabilizers (antidepressants and lithium), beta-blockers, anti-convulsants, and minor tranquilizers. Research on the biological factors associated with PTSD is at a rudimentary level. As this research expands our base of knowledge on the biological changes of PTSD, we will be able to employ and develop medications that will assist these patients in their adjustment.

PTSD and pharmacotherapy

Several early preliminary studies suggested that the monoamine oxidase inhibitor (MAOI), phenelzine, is effective in the treatment of traumatized individuals (Hogben & Cornfield, 1981; Milanes *et al.*, 1984). The MAOI's are considered antipanic agents, antidepressants, and they inhibit REM sleep. Hogben and Cornfield (1981) reported the rapid remission of nightmares, flashbacks, startle response, panic and anxiety in five traumatized patients treated with phenelzine. It was also reported that these symptoms failed to remit when the patients had earlier received a regime including an antipsychotic and an antidepressant to reduce their symptoms. While Milanes *et al.* (1984) suggest phenelzine is effective in the treatment of nightmares, hyperalertness, irritability and anxiety, van der Kolk (1983) reported an increase in vividness, and hence *worsening*, of daytime traumatic memories in four of seven patients. Friedman (1988) cautions also that phenelzine may not be the best treatment option for PTSD patients with alcohol and substance abuse problems (due to increased risk for relapse via response generalization), and that its applicability may be limited to groups with low alcoholism rates.

Tricyclic antidepressants are used most often in treating PTSD. The use of tricyclics has been justified by the phenomenologic overlap between symptoms of PTSD and those disorders known to respond to antidepressants. van der Kolk *et al.* (1985) conceptualized post-traumatic stress as neurochemically-mediated autonomic hyperarousal and hyperreactivity in response to inescapable stress (i.e. 'trauma'), involving noradrenergic pathways and as a physiological state resembling dependence on high levels of stressor-activated endogenous opioids. Since tricyclics appear to enhance endogenous opioid release through potentiation of synergistic serotonergic mechanisms (Malseed & Goldstein, 1986), their utility in PTSD may be due to their modulating effect on this process. In addition, by their antipanic action, tricyclic antidepressants work to dampen hyperarousal, reduce intrusive memories, decrease flashbacks, and reduce traumatic nightmares, and appear to be especially efficacious with traumatized patients who also are clinically depressed. Antidepressant medications that affect serotonin release may also prove to be valuable treatment adjuncts for traumatized patients (e.g. fluoxetine).

Falcone, Ryan and Chamberlain (1985) reported improvements in retrospective data and clinician ratings of traumatized patients treated with tricyclics. These investigators compared the effects of amitriptyline, imipramine, desipramine, and doxepin with 17 combat veterans over a 6–8 week trial. Results suggest the most beneficial effects were evidenced with amitriptyline treatment, which led to reductions of nightmares, flashbacks, and panic symptoms. The investigators reported some improvement in all patients treated, and attributed a poor response to patients dually diagnosed with substance abuse problems. Burstein (1984) found a reduction of positive symptoms of PTSD in 10 patients treated with imipramine, but no change in or an exacerbation of avoidant symptoms. Most recently, Davidson *et al.* (1990) compared the use of amitriptyline with placebo regimens with 46 PTSD-diagnosed combat veterans (World War II, Korea, and Vietnam), and found that the tricyclic but not the placebo produced significant reductions in Hamilton Depression and Anxiety Interview scores, number and severity of PTSD symptoms, and Clinical Global Impression (for improvement). In a recent review, Ross, Ball, Sullivan & Caroff (1989) also indicated that tricyclics might be useful in treating the positive symptoms and sleep disturbance of PTSD. Moreover, when compared to the MAOIs, the tricyclics have less risk for patients with histories of alcohol or substance abuse (Friedman, 1988), common coexisting diagnoses of PTSD.

Consistent with the behavioral model of PTSD, Kolb and Mutalipassi

(1982) conceptualized the symptoms of PTSD as conditioned emotional responses to environmental stimuli that are reminiscent of the traumatic event; this conditioned response is thought to be related to excessive central and peripheral adrenergic sympathetic activation. Accordingly, trials of the antihypertensive, clonidine, and the beta adrenergic blocker, propranolol, were found to improve sleep and decreased hyperalertness. In a more recent study, patients who were treated with either clonidine or propranolol reported a decrease in startle responses, explosiveness, and intrusive reexperiencing, while those on both drugs concurrently reported decreased nightmares (Kolb, Burris & Griffiths, 1984). Follow-up at six months revealed continued symptom reduction for the majority of subjects (reduced explosiveness, decreased nightmares, improved sleep, decreased intrusive recollections, less startle, reduced hyperarousal).

Benzodiazepines have often been the drug of choice for many anxiety disorders. The anxiolytic effects of these drugs appear to be due to their effect on the CNS GABAergic system, which directly influences the symptoms of autonomic arousal and anxious mood by exerting an inhibitory effect in the central nervous system. While alprazolam has demonstrated antipanic and antidepressant properties, this drug causes concern due to its addiction potential and withdrawal effects (Friedman, 1988). Treatment with the benzodiazepines in patients with alcoholism, chemical abuse histories or dependence may also be problematic due to cross over tolerance effects. While this class of drugs improves sleep and decreases nightmares in some patients, their effects may increase the likelihood of abuse or overmedication (van der Kolk, 1987). Furthermore, recent findings with alprozolam suggest that minor tranquilizers may interfere with the long-term benefits derived from behavior therapy (Klosko *et al.*, 1990).

Conceptualizing post-traumatic stress as a result of a neurobehavioral kindling process provides a rationale for trials of the anticonvulsant, carbamazepine. While one carbamazepine treatment study reported improvement in combat-related dreams, flashbacks and intrusive recollections (Lipper *et al.*, 1986), another described reductions in violent behavior and angry outbursts (Wolfe, Alavi & Mosnaim, 1988). Lithium carbonate has also been used to treat the symptoms of loss of control and anger outbursts seen in trauma patients (van der Kolk, 1983). Of 22 patients treated with lithium, 14 reported gaining a subjective sense of control over their lives with a decrease in the hyperreactivity to stress and hyperarousal. The precise mechanism of action for these effects is debatable and the effects of the anticonvulsants on diversely different symptoms in the studies to date

Table 17.3. *Symptom changes in combat veterans receiving pharmacotherapy*

Article	Medication	Symptom changes from treatment
Burstein (1984)	Imipramine	Decreased positive symptoms
Davidson, Kudler, Smith, Mahorney, Lipper, Hammett, Saunder & Cavenar (1990)	Amitriptyline	Decreased depression Decreased anxiety Decreased PTSD score Increased clinical global impression (for improvement) score
Falcone, Ryan & Chamberlain (1985)	Amitriptyline Imipramine Desipramine Doxepin	Decreased nightmares Decreased flashbacks Decreased panic symptoms (effects most notable with Amitriptyline)
Hogben & Cornfield (1981)	Phenelzine	Decreased nightmares Decreased flashbacks Decreased startle response Decreased panic symptoms Decreased anxiety symptoms
Kolb, Burris & Griffiths (1984)	Clonidine Propranolol both drugs	Decreased startle response Decreased hyperalertness Decreased flashbacks Decreased nightmares
Kolb & Mutalipassi (1982)	Clonidine Propranolol	Improved sleep Decreased hyperalertness
Lipper, Davidson, Grady, Edinger & Cavenar (1986)	Carbamazepine	Decreased nightmares Decreased flashbacks Decreased intrusive thoughts
Milanes, Mack, Dennison & Slater (1984)	Phenelzine	Decreased nightmares Decreased hyperalertness Decreased irritability Decreased anxiety symptoms
van der Kolk (1983)	Phenelzine	*Increased* vividness of daytime traumatic memories
van der Kolk (1987)	Lithium	Decreased hyperreactivity Decreased hyperarousal Increase in subjective sense of control
Wolfe, Alavi & Mosnaim (1988)	Carbamazepine	Decreased violence Decreased anger outbursts

raises questions about the conceptual basis for these medications. Clearly, more research is needed to help us understand these effects.

Differential symptom effects

Review of the studies described above suggests pharmacotherapy may provide relief from the positive symptoms of PTSD, but is relatively ineffective in or has not been properly evaluated for ameliorating negative symptoms (see Table 17.3). Pharmacotherapy appears effective for reducing target symptoms of intrusive recollections, sympathetic arousal (startle, flashbacks, explosiveness) and disturbances of sleep (nightmares). Negative symptoms such as alienation, detachment, and psychic numbing have not been successfully treated with medication. The uneven effect found for pharmacotherapy may be due in part to the inconsistencies in the dependent variables employed.

The medications reviewed above were selected in part on the basis of their effectiveness for reducing symptoms shared by post-traumatic stress with other disorders, mainly panic and depression. Etiological differences between these disorders may account for the limited treatment effects described above. While post-traumatic stress and panic disorder share the features of heightened psychophysiological arousal, startle, and sleep disturbance, Friedman (1988) outlines several key differences. In panic disorder, attacks seem to be nonspecific and spontaneous, presumably involving a physiological basis; post-traumatic stress appears to be primarily psychological, tied to a clearly identifiable traumatic precipitant. Sleep is also different in both disorders, with stage 4 sleep reduced in PTSD but increased in panic disorder (Ross *et al.* 1989). Friedman also points out differences in shared symptoms of PTSD and depression, most notably in terms of amount of REM sleep and REM latency, sympathetic arousal levels, and differential response of the hypothalamic–pituitary–adrenocortical axis. Clearly, there is need for comparative studies evaluating specific symptomatology and drug response across disorders.

Summary and comments

The decision to use medication in the treatment of trauma may best be guided by a conceptual framework about traumatic stress. Such a framework would assist in decisions regarding which medication is appropriate for which patients showing which symptoms. Clearly, more biological modeling is needed in this process. Overall, however,

the tricyclic antidepressants may be the best treatment option, in light of the potential for abuse and withdrawal and tolerance effects apparent with some medications, such as the benzodiazepines (Friedman, 1988), as well as the growing evidence that these medications may interfere with the therapeutic process of psychological treatment (specifically exposure based therapy; see Barlow, 1988, and Klosko *et al.*, 1990). Serotonergic medications such as fluoxetine, while only now being tested in clinical trials, also shows promise for the treatment of PTSD.

OTHER TREATMENTS

Skills training

Skills training with trauma populations involves the identification of behavioral excesses and deficits (symptoms) that cause significant psychological distress or impair an individual's ability to function. Skills training interventions can be employed in a prescriptive fashion to address a variety of symptoms. The efficacy of skills training has been demonstrated across a variety of target problems such as anger control (Novaco, 1975) and deficits in interpersonal skills (Kelly, 1982); problem solving skill (Nezu & Carnevale, 1987), and assertiveness (Rimm *et al.*, 1974). It has also been used with diverse populations.

Skills training may be especially useful in ameliorating the negative symptoms of PTSD (including avoidance, withdrawal and alienation), which can be considered as behavioral deficits (Keane *et al.*, 1989). Experience with trauma can disrupt previously learned behavior patterns in such a way that an individual previously described to be socially outgoing may become withdrawn and avoidant following the trauma. Skills training interventions typically involve promoting previously learned and new adaptive behaviors. Examples include social, job, and dating skills, assertiveness, and stress management. Similarly, for a behavioral excess such as recurrent anger outbursts, skill training in anger control would be one appropriate intervention. For example, McWhirter and Liebman (1988) describe a six-week group intervention program for anger management with Vietnam veterans. Cognitive restructuring, structured experiential activities, and assertiveness training are combined in this program, with a focus on reintegration into society.

Skills training interventions often involve training in identification of setting events. By definition, in PTSD the traumatic event (or series of events) is readily identified. Stimulus features of the event are then

assessed and the individual is trained to recognize cues which elicit and reinforce the deficit/excess problem behavior. The intervention is then devoted to skill acquisition, using techniques such as role playing, cognitive restructuring, *in vivo* exposure exercises, and relaxation training. The consequences of adaptive and maladaptive behaviors, with a focus on reinforcement mechanisms, are elucidated. Throughout training, feedback is given to the individual through verbal instructions, participant modeling, and constructive criticisms.

The positive symptoms of PTSD may also be treated using a prescriptive intervention approach. For example, relaxation training, guided imagery, and stimulus control procedures may be utilized to treat the insomnia and sleep disturbance symptoms. The patient may be trained to utilize relaxation techniques to address initial insomnia, and utilize both relaxation and imagery for disrupted sleep. Symptoms of fear and heightened anxiety may be treated with cognitive restructuring and guided exposure to stress-provoking situations. Similarly, systematic desensitization has proven effectiveness and can be used to treat trauma-related fears and anxiety.

Family therapy

For the individual trauma survivor, stress is experienced acutely during and immediately after the traumatic incident(s), and again later when readjusting to family and the routines of life. Figley (1978) suggested that at times family interaction may exacerbate an individual's symptoms of PTSD. Several investigators have described the adverse effects on the families of trauma survivors (Figley, 1985; Masters, Friedman & Getzel, 1988).

Consistent with a family systems theory perspective, family interactions both affect and are affected by the victim's psychological distress. Accordingly, attention has been directed toward family interventions with individuals suffering from PTSD. Employing this approach, the therapist's goal is to assess the severity of the victim's disorder, and the impact of the disorder on family interactions. Interventions to address both the stress disorder and the related dysfunctions within the system (Stanton & Figley, 1978) are appropriate. Silver and Iacono (1986) evaluated family interactions *vis a vis* symptom patterns in combat veterans suffering PTSD. Results suggested that family therapy had a beneficial impact on both the veteran and the family system. Family interactions as a whole also appeared to be more important in the maintaining the disorder than were traumatized individual's responses, and positive changes in family

functioning often predicted improvement in individual functioning. Improvements in family functioning also indirectly yielded improvement in such symptomatology as withdrawal and avoidant behaviors, which as earlier described, tend to be less responsive to other approaches.

Figley (1988) developed a five-phase family systems model to facilitate the individual's return to pre-trauma functioning within the family system. The therapeutic goals were to rebuild rapport and trust, promote self disclosure, and enable the family to handle future stressors. The intervention phases of the model involved: 1) gaining commitment to therapeutic objectives; 2) framing the problem through testimonials and resolving interpersonal animosity; 3) reframing the problem to help better equip the family for managing crises; 4) developing a 'Healing Theory', which describes descriptions of adaptive statements concerning the traumatic event, individual family members' responses, and a positive approach to solving future crises; and 5) closure and reinforcing the family's accomplishment. While this model offers promise as an addition to other therapeutic approaches, it also remains to be tested via controlled clinical research.

Group therapy

Group therapy has traditionally been viewed as a mechanism for providing therapeutic benefits separate from those gained through individual therapy (Yalom, 1975). In his classic work with groups, Yalom (1975) posited the many benefits derived from the group process and functions including: 1) instillation of hope, 2) universality, 3) imparting of information, 4) altruism, 5) the corrective recapitulation of the primary family group, 6) development of socializing techniques, 7) imitative behavior, 8) interpersonal learning, 9) group cohesiveness, 10) catharsis, and 12) existential factors. One might also add that the group environment also provides a forum for *exposure* to trauma-related stimuli, such as other victims, and in sharing experiences reactivating painful memories of traumatic incident(s). Thus, group therapy may provide a valuable forum for the treatment of torture victims.

Group treatment has been successful in the treatment of a number of traumatized populations, including Vietnam combatants (Ben-Yakar, Dasberg & Plotkin, 1978; Egendorf, 1975), and rape victims (Cryer & Beutler, 1980). Its use with survivors of torture would, with the appropriate structure, provide an important component to comprehensive treatment of PTSD.

PREVENTION OF POST-TRAUMATIC STRESS DISORDER SYMPTOMS

Several implications for the prevention of chronic symptoms of PTSD may be drawn from the research on assessment and treatment of victims of trauma. First, not all people who experience a traumatic event develop subsequent disabling psychological disorders. Brom and Kleber (1989) reported that approximately 80% of all people who are confronted with a trauma, utilize their own resources and social support to work through the after effects. Thus a minority of cases solicit professional assistance in coping with any adverse psychological sequelae. While not every victim needs intensive professional care, most would derive benefit from some form of support or crisis intervention. Timely access to services for the individual, group and family, may also be critical for preventing the development of persistent problems.

The following section reviews three factors to consider in efforts to prevent chronic PTSD: 1) the role of social support, 2) trauma debriefing, and 3) a cognitive behavioral treatment package which may preclude the progression of acute to chronic PTSD symptoms in trauma survivors.

SOCIAL SUPPORT

Social support has received considerable attention as a mediating variable between the experience of trauma or stress and development of related disorders (for an early review, see Leavy, 1983). Solomon (1986) outlined four components of social support: 1) emotional support, which may include providing information that one is loved, cared for, and respected; 2) reciprocity of obligation, in which the individual is a part of a support system of reciprocal help and mutual obligation; 3) task-oriented assistance, which involves the provision of direct aid (to the victim), and 4) provision of information relevant to coping, which may involve validating feelings and providing feedback about the appropriateness and impact of one's fears, beliefs and opinions.

Several studies have reported that the *absence* of social support in stressful situations acts to increase the likelihood of developing post-trauma difficulties (Cobb, 1976; Hobfoll & Walfish, 1984; Murphy, 1988; Solomon, Mikulincer & Avitzur, 1988). Murphy (1988) suggests that social support which is developed and maintained over time and exists prior to traumatic stress may protect individuals from the negative

effects of trauma. She cites research evidence where the perception of spousal love and a stable network of supportive others predicted stress-related health consequences (Antonovsky, 1979; Burke & Weir, 1977; Miller, Ingram & Davidson, 1976).

While pre-trauma social support appears to moderate the negative effects of trauma, several investigations have studied the role of post-trauma support (Barrett & Mizes, 1988; Foy *et al.*, 1987; Kadushin, Boulanger & Martin, 1981; Keane *et al.*, 1985). In one study, combat veterans who had high social support after discharge reported significantly less psychological distress than those who reported low social support (Kadushin, Boulanger & Martin, 1981). Results indicated that positive emotional support from a spouse resulted in considerably less acute distress (one fourth the level seen without support) than in men with low spouse support. Furthermore, nearly half the married men in this study with acute post-trauma symptoms did not develop chronic distress as opposed to 71% of unmarried men who continued to experience chronic stress. Keane *et al.* (1985) compared a group of Vietnam veterans with PTSD with two groups of Vietnam era veterans without PTSD. The levels of social support prior to military service among the three groups were equivalent. However, the PTSD veterans reported a steady decline in social support since the time of their discharge from the military. Social support among the comparison groups was stable across the three time periods measured.

It has been suggested that American society as a rule rejects trauma survivors (Janoff-Bulman, 1982) and certainly the sociopolitical controversy surrounding America's involvement in Vietnam adversely affected the readjustment of many veterans. Laufer & Gallops (1982) explored the influences of society on the exacerbation of PTSD symptoms in Vietnam veterans. In this retrospective self-report study, the authors found a significant relationship between combat exposure and feelings of withdrawal and alienation upon return stateside. Further, the authors suggested this relationship applies only to combat veterans returning after the year 1967, a point of departure in Americas' support for the war and it's participants. Foy *et al.* (1987) reported similar results comparing PTSD to non-PTSD veterans in their perceived experience of cynicism, alienation, physical neglect and demeaning experiences upon their return from Vietnam.

Barrett and Mizes (1988) studied the influence of social support and exposure to combat in the development of PTSD in 52 Vietnam combat veterans. Results demonstrated that veterans who received high social support reported fewer symptoms of PTSD, depression, and other psychological disturbance than those receiving low social support.

However, the investigators correctly suggested that the display of PTSD symptoms may have decreased the social support the veterans received, rather than *vice versa*, i.e. traumatized individuals have an impaired capacity to access and utilize social support due to PTSD symptomatology. This contention is supported empirically by several studies which show that combat veterans with PTSD tend to have problems with intimacy and sociability (Roberts *et al.*, 1982) as well as problems with self disclosure, increased aggressiveness, and poor marital adjustment (Carroll *et al.*, 1985).

In a recent study, Solomon *et al.* (1988) examined the relationship between coping, locus of control, social support and combat-related PTSD in 262 Israeli soldiers who suffered combat stress reactions during the 1982 Lebanon War. Veterans were assessed two and three years after their tour of combat to evaluate the process of recovery. Results indicate that PTSD intensity declined between the two points in time, suggesting an ongoing recovery process. Further, veterans with an internal locus of control perceived greater social support. While the direction of causality was unclear, results suggest a significant link between post-traumatic stress intensity with personal and social resources. The investigators report that social withdrawal and emotion-focused coping led to increased PTSD intensity, whereas less introspective focusing and more social contacts lessened PTSD intensity. The avoidant symptoms of PTSD were viewed as a contributing factor in orienting a veteran's coping toward his internal state, and thus rendering him unable to access external support.

In sum, research with trauma victims and combat veterans with PTSD suggests that social support may provide important benefits to trauma survivors. Social support can be provided by positive emotional affiliation with and caring from significant others, and from the perception of respect and acceptance from the community. The individual's ability to access social support is related to the intensity of the avoidant and intrusive symptoms of PTSD, and thus while support may be available, the nature and extent of PTSD symptoms may prevent accessing such support or alienating potential support providers.

Provision of social support following a traumatic event can be a complicated matter. Social systems are complex and do not always have a beneficial impact on trauma survivors. For example, one study of disaster suggests that experience with established social support systems may in fact increase victims level of distress. For example, Hartsough (1985) described how the activities required of victims following a disaster in accessing temporary housing, and obtaining

loans and grants to facilitate return to suitable housing compounded distress and delayed recovery. Additionally, the victim can be secondarily traumatized if he or she is in some fashion held responsible for the event, or is viewed to have been in collusion with the perpetrators (for a review, see Janoff-Bulman, 1982). Examples of such reasoning can be seen in perceiving a rape or incest victim as one who 'asked for it' and seduced the perpetrator, and in communities that view individuals who have been tortured as a result of their political beliefs and activities as having deserved punishment for unpatriotism or dissidence.

Relatedly, it is not certain whether trauma victims are more symptomatic without social support, or that trauma victims with greater symptomatology advertently or inadvertently reject support from those around them. In the former case, the remedy is to give the trauma victims support and resources as soon as possible. In the latter case, remedial efforts are not as clear cut. Certainly one might engage in efforts to decrease the post trauma symptomatology (relaxation training, group debriefing, exposure-based therapy, pharmacotherapy) or to train the victim in skills for appropriately soliciting help from their social support system.

TRAUMA DEBRIEFING

Immediately following trauma exposure, the treatment of choice is to permit survivors or victims to emotionally and cognitively process the incident(s), either with other survivors or professionals prepared to debrief them.

A critical aspect in treating trauma survivors and victims is the timing of the intervention. In general, interventions that are implemented soon after the trauma seem to produce the greatest benefit (Moses, 1977). It can be said that during this period the victim's disrupted cognitive, physiological, and behavioral patterns have not yet had time to become firmly established and attempts to mitigate chronic disorder will be maximally effective. Evidence for this contention can be found in the military psychiatry treatments on or near the battlefield in Vietnam (Bloch, 1969) and Israel (Jones & Johnson, 1975), and in rape crisis treatment (Haywood, 1975).

If treatment is best delivered immediately after traumatization, behavioral interventions can easily be modified to accommodate the more acute manifestations of the disorder. For example, re-exposure to the traumatic stimuli might take other forms, such as keeping traumatized combatants in safe quarters as near to the event as is reasonably

possible so that conditioned responses to war related stimuli do not develop, or for the same purpose by encouraging torture victims to discuss their experiences and memories of the trauma.

During this acute-crisis period for treatment, overwhelming arousal, in the form of anxiety (Fairbank, Keane & Malloy, 1983) or mood disturbances (Helzer, Robins & Davis, 1976; Helzer *et al.*, 1979; Rickarby, 1977), can be treated in the short term with medication (e.g. anxiolytics or sedatives). This practice permits the delivery of primary therapeutic efforts in which control of overwhelming symptoms is achieved.

Evidence from other studies suggests that the best treatment strategy is to enhance the traumatized individual's sense of 'belongingness' (Dasberg, 1976). A key ingredient here may be the social support, seen lacking with some traumatized populations (Keane *et al.*, 1985).

Possibly the most important task to accomplish during a critical incident debriefing is to educate the victims and survivors about the psychological sequelae frequently experienced by all. This normalization of stress can reduce people's responses to the inevitable symptoms of stress, depression, guilt, sleep disturbance, and traumatic intrusions.

STRESS INOCULATION TRAINING

Experiencing traumatic stress can inculcate feelings of helplessness and despair, symptoms resulting in large part from a loss of control during the episode. Stress Inoculation Training (SIT; Meichenbaum, 1977; Meichenbaum & Turk, 1976) is a cognitive behavioral treatment package utilized by clinicians to ameliorate the psychological consequences of many forms of stress.

The concept of stress inoculation as an intervention and prevention measure has been represented in the early psychoanalytic and behavioral literature (for a review see Meichenbaum & Jaremko, 1983). Similar to the biological notion of immunization from disease, stress inoculation proposes that graded exposure to anxiety-provoking stimuli positively affects an individual's ability to tolerate anxiety, and thus inoculates the individual from higher intensities of stress. Through graded exposure, an individual also becomes aware of behavioral, subjective, and physiological signs of heightened anxiety while practising and mastering cognitive and behavioral coping skills. Janis (1983) proposed that stress inoculation training increased self confidence, hope, perceived control, and self-efficacy.

Stress Inoculation Training involves three phases. Phase 1, the *Education Phase,* introduces participants to information about stress, anxiety, and how they affect us. Participants are told that maladaptive emotions (anxiety, rage, avoidance) provide important cues and that these emotions contain a modifiable cognitive component. Cognitive self-statements are identified and monitored during this phase to help the participants assess their own anxiety experience, so that when confronting an anxiety provoking event (such as exposure to cues which remind the individual of the original trauma), they respond with effective coping statements and action.

In Phase 2, the *Skill Acquisition Phase,* participants are taught specific coping skills in four stage stages: 1) generation of positive self statements, which will assist the individual in preparing for a stressor, 2) confrontation of a stressor while practising positive self statements (usually through imagery), 3) rehearsal of self-statements aimed at coping with elements of a situation that may elicit a subjective feeling of being overwhelmed or panicked, and 4) instruction in verbal self-reinforcement for mastery of the stress. This skill acquisition phase is designed to help develop coping techniques that serve both to modify self-defeating cognitions to and control physiological arousal. A major focus is to teach constructive reactions to early signs of arousal and anxiety.

The final phase of SIT, the *Application Phase,* is introduced once the participants demonstrate mastery of relaxation and therapeutic self statements. In this phase, participants are exposed to imaginal and real stressors in a graded series of presentations. The purpose of this phase is to assist in the generalization of the skills learned in therapy to other spheres of their lives.

Research on the effectiveness of stress inoculation training has been demonstrated in patients with chronic pain (Wernick, 1983), victims of terrorism (Ayalon, 1983), military recruit training (Novaco, Cook & Sarason, 1983), and other stress provoking situations (for a review see Meichenbaum & Jaremko, 1983). While the package may be applied on an individual or group level, Meichenbaum and Jaremko (1983) stress the importance of tailoring the program to meet individual situational needs and to reflect the specific stressors and related stimuli for the particular trauma.

SUMMARY AND COMMENTS

Methods for preventing PTSD symptoms are reflected in stress inoculation training, trauma debriefing, and utilization of social support

networks. Clearly, services to victims and survivors are most effective when they are multifaceted and available immediately. Intervention programs that are easily accessible and provide the needed education, social support, and peer exchange can effectively reduce long term psychological consequences of trauma. Programs specifically for family members and significant others that include education about stress and its consequences would also promote positive family adjustment. Resources for learning coping skills and stress management training are conceivably the most important techniques to be taught to survivors. Clearly some survivors have individual needs beyond critical incident debriefing and treatment needs to proceed according to these differences. Individual therapy might include education about stress, self monitoring, discussions on personal experiences and their cognitive appraisal, assertiveness skills and stress management training, expressive therapy, problem solving training, and methods to enhance social support.

FUTURE DIRECTIONS

Research on PTSD needs to proceed in a systematic fashion in order to evaluate fully treatment effectiveness. Studies that empirically evaluate components of treatment are clearly needed. With the advances that have been made in the assessment of PTSD, clinicians and researchers are in a unique position to determine precisely the effects of different treatments for trauma. Indeed, instruments are now available to assist researchers in understanding the differential effectiveness of treatment on the reliving/intrusive symptoms, the numbing/avoidance symptoms, and the arousal symptoms of trauma (Blake *et al.*, in press; Watson, 1991*a*; Watson *et al.*, 1991*b*). These advances in assessment will undoubtedly enhance our ability to determine which treatments are most effective with what types of patients and in what time periods following traumatic events.

Victims of torture and other forms of trauma are now benefiting from the advances made in the psychological sciences and the neurosciences as applied to PTSD. It is incumbent upon our society to continue to support such advances since trauma appears to be occurring with high frequency as our society becomes increasingly technological and the population of the world struggles to meet the accompanying economic and social challenges. The treatment of torture victims and their psychological trauma will continue to be a top priority in social policy for the foreseeable future.

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